NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS AND SCIENCES.

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ICE HOUSES.

There are many modes of building ice houses.—Some make them below the ground, in the manner of a cellar; but the dealers in ice in this vicinity, who have large fabrics for this purpose, or many of moderate size, build them all above ground. A small ice house, to furnish one or two families with ice, may be made conveniently below ground. The walls may be made in a rude or nice manner, of course in a very cheap or more expensive way, as suits the taste of the owner.

Some lay the ice against the walls, but it will not melt so soon, if a row of poles or joists be placed along against them, and the ice laid against the poles. This mode of construction is very cheap, and the house will be durable, needing but little repairs.

The soil must be porous, so that the water from melted ice will readily disappear in the earth, else there must be a drain to conduct off the water. In the bottom, place small blocks of wood more than a foot deep, level them, and place a layer of shavings over them. Over these lay a plank floor. The layers of blocks and shavings retard the melting of the ice.

At the top of the ice room, lay across beams, on which place a floor. On this floor put a layer of tan or saw-dust, one or two feet thick; the latter is the better. Or make a layer of fine shavings or straw, two or three feet thick. Make a roof that is tolerably steep, then there will be less heat at the top from the sun. At the ends of the roof have ventilators to conduct off the heat, which will accumulate in it on a hot sunny day. In preparing an entrance for the purpose of filling the house within, and taking it out, when necessary, it is better to have two doors, in order to exclude the heat more effectually.

In making an ice house above-ground, there should be on all sides two rows of posts, set in the ground, of stout joists, or large poles, with one side hewed straight. These rows should be about two or two and a half feet apart, with the hewed sides facing the other row. On these fair sides of the post, boards should be nailed. Then the outer row of posts will be outside the building, and the inside row, on the inside, so that the filling between the two board walls, will press the boards against the posts. The space between the board walls should be filled with tan, saw dust, or charcoal dust. Fine shavings, straw, chaff, husks, leaves, and other light substances will answer, but they are not so good, and when they are used, they should be packed in close, and trodden down as firm as possible; and it would be well to make the space wider, if light materials are to be used.

Make the foundation, the upper floor, and roof, the same as when the house is under ground, and observe the same caution about double doors at the entrance. The beams at top will go on to the posts, and keep them in their place, at the sides; and at the ends, the posts must be fastened together, that they may not spread with the weight of materials between the boards.

The expense of an ice house is small, and the annual cost of filling it is but a trifle, yet the advantages from a good supply of ice are great. It is a luxury in hot weather, in rendering drinks more palatable, and if used judiciously it is not only free from injury, but actually conducive to health. Ice water, in time of drought, is far better for health than the low and often filthy drainings from springs and wells, that often cause various diseases, so common in hot, dry seasons.

In the preservation of transient fruits and fresh provisions, and in keeping various articles of food in a sweet and palatable condition, ice is very important—a necessary of life to those who have become accustomed to its use. In a dairy it is highly valuable both as a matter of convenience, and of decided profit. As we need heat in the severe cold of winter, so we need ice to temper the effects of the scorching heat of summer. Generally our cold winters furnish a large crop of ice, and the numerous natural ponds, the advantages for artificial ponds, and the rivers, afford great convenience for obtaining this article in a very cheap manner.

HOMESTEAD EXEMPTION.

The subject of exempting the homestead, to a fixed amount in value, from attachment, is attracting much attention in most parts of the community; and a number of States have already passed laws to this effect. In some States provision is also made that the husband shall not transfer the homestead, of the same limited amount, without the consent of his wife.

We think that judicious laws upon this subject would have a salutary effect on the prosperity and general happiness of the community. The effect would not be generally to prevent the creditor from paying his debts, but to enable him finally to discharge them, by having a house for himself and family. By being protected legally as though he was a man, and his family regarded as beings worthy of the kind consideration of society and of law.

With the homestead exemption, a man and his family may and will work in order to procure a dear and sacred spot, which they may call "sweet home," around which the family circle may cluster, and live in harmony and comfort, sheltered from the rude blast and inclement skies, and the still ruder blasts of the law. Besides the exertions of the husband and father to embellish and render delightful that spot that is ever dear to the heart, his wife and children, also, lend their aid in the planting of trees, shrubs, and beautiful flowers to adorn that home which they may call their own, and which cannot be wrested from them by any adverse fortune. While the foxes have holes, and the birds of the air have nests, and our beasts of the stall have comfortable quarters, and are well fed, shall it be said that the man of misfortune, his wife and children, perhaps suffering also under the "ills that flesh is heir to," have not where to lay their heads, but in penury, and friendless, must be turned to "the pelting of the pittiless storm;" and perhaps exposed to the scorn of less worthy persons, who at that period may chance to be at the top of the revolutionary wheel of fortune.

What will be the effect of the homestead exemption? The man who is liable to be reduced to the necessity of claiming it, cannot get trusted so readily. Very well; let him endure this disadvantage rather than peril the dear home of his family. If he cannot live without trust when he has a good house and a few acres of land, how can he live when his house and credit, and as many vainly think, his reputation are gone. Better never be trusted, than make a debt that will as surely sweep away his happy home, as an avalanche or an impetuous stream from the mountains.

The person who trusts a man with a view of taking from him and his family that shelter to which they fondly cling as the only dear spot on earth, should never be indulged by putting the gripe of the law in his grasping hand. Let a man retain his home, and economise and live within his means, and not injudiciously, as is the case with many, contract debts unnecessarily, and as is sometimes the case for purposes worse than useless, and then his worthy family have to suffer, perhaps through life, the consequence of his indiscretion. The general welfare of the community requires that the unfortunate should not be "kicked still a peg lower," and the number of paupers increased.

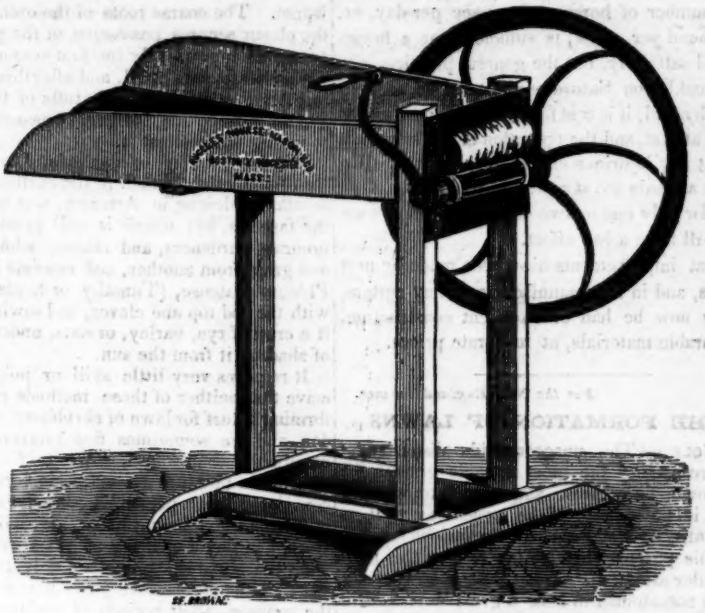
Agricultural Meetings.—On Friday evening a number of farmers met at the State House, Dr. Gardner of Seekonk, was called to the chair, and the meeting was organized by appointing the following gentlemen; Whittaker of Needham, French of Braintree, Newell of West Newbury, Earle of Worcester, and Fowler of Amherst, a committee of arrangement, to select subjects, procure speakers, appoint presiding officers, &c. S. W. Cole was appointed permanent Recording Secretary; and Mr. French, President. No subject was proposed for the next evening. A few desultory remarks were made by several gentlemen on the grand subject of agriculture. Adjourned to meet next Tuesday evening at seven o'clock.

BREEDING ANIMALS.

The principles of breeding animals have rather been illustrated than discovered by animal physiology—the very principles of that science having been taught before a single scientific axiom had been applied.

The watching of physiological tendencies, and availing themselves of those judiciously in practice, was long anterior to scientific research. Emulating the skill of the wily progenitor of the Jewish race, and intelligently perceiving what was required, a Culley and a Bakewell attempted and attained the production of sheep, and of cattle "ring-streaked, spotted and speckled," at pleasure. Seeing the necessity of economizing food, they set about producing those animals which came to maturity early, and so produced vastly more food for the same amount of vegetation. Knowing that fat was an element of favor in a northern clime, they endeavored to obtain animals with a tendency to secrete it in large quantities. In order to do this, they observed the qualities indicative of these propensities; and knowing that it is as true in physiology as in mathematics, that like produced like, they selected and bred from these until they stamped their qualities permanently and invariably and indelibly on the race. With these they managed to combine symmetry of form.—*M. M. M. in Far. Mag.*

A New Life Boat.—A life boat, quite rural in its design, has been invented in England. It has air-tight seats all round the side, but the bottom consists of open work of iron, so that the water passes freely through, and even wets the feet of the rowers. The advantage is, that the water inside and outside is on the same level, and the boat is ballasted and kept upright by the water itself.—*Scientific American.*



HAY, STRAW AND CORN-STALK CUTTER.

So great is the utility of cutting fodder for stock, that it can only he appreciated by those who have had experience in the business. We know of many who have seen such great advantages in this mode of preparing fodder, that they buy a cutter when they have only one animal, a horse or cows, for instance, to feed.

In cutting fodder there is great saving of food, for in most cases there is in hay, straw, and particularly in coarse fodder, some parts that are not palatable though they contain a good share of nutriment. When these are cut up and mixed with the rest, moistened with water, and meal or bran are mixed with them, and occasionally a little salt, or a very small quantity of salt daily, the animal eats the whole up clean. This saving of food is great when the fodder is of an ordinary quality, and liable to be wasted or rejected.

Another great advantage in the use of cut food, is the despatch with which the animal eats it, affording time to rest, or an opportunity to labor in due season. We have observed that some horses fed on moist hay and ground grain, would eat a meal nearly as quick as a man would eat his, instead of requiring two or three hours, as is often the case when horses are fed on fodder in its crude state.

Chopped and moistened food is more wholesome than dry. In hot weather a horse may be very hot, and at the same time very hungry and thirsty. But what is to be done, if he must be fed on dry hay? He is too hot to drink, and too thirsty to eat. But if prepared food be placed before him, he can eat, and satisfy his hunger, and allay his thirst with the moist re in his food; and he will gradually become cool so that he may drink without injury. In cold weather, too, a horse might suffer from drinking when warm, or eating dry food when suffering from thirst.

In some cases animals fail in their teeth, while otherwise they are sound and strong, and for many years would do good service, if their food was prepared so that they could eat it in due time, and without difficulty. The fodder cutter is a means of lengthening out the period of usefulness of many highly valuable animals.

Some horses that have been severely afflicted with the heaves while fed on dry fodder, have been so far relieved by being kept on cut, moistened food, that they have labored constantly, and have been regarded as wholly recovered from the disease. Oxen, as well as horses, need their fodder prepared that they may eat it in less time and with less labor in masticating it, in order to have an opportunity to chew the cud. As ruminants constantly practise this when they have time, they must suffer an inconvenience when compelled to labor immediately after eating. This operation, so important to their health and comfort, could be attended to much better by using cut food, and thus reducing the time for eating. Even cows, sheep, and other animals would find an advantage in cut food, as well as the owner, in the economy of this article, as they could soon eat their meals, and thus have time for rumination and rest. All animals require rest, as well as the human race.

In giving animals salt daily in their food, caution is necessary, lest it be fed too freely. From the experience of the best English farmers, who keep

a large number of horses, one ounce per day, or, half a pound per week, is sufficient for a horse. Some feed salt daily, but the general practice is to give it weekly, on Saturday night. For, as it is slightly physical, it is best for it to operate when the animal is at rest, and the operation of the salt tends to prevent any injurious effects from liberal feeding while the animals are at rest. In some cases, high feeding, for only one or two days, when horses are at rest, will have a bad effect.

As great improvements have been made by new inventions, and in the manufacture of hay cutters, they may now be had of excellent construction, and of durable materials, at moderate prices.

For the New England Farmer.

ON THE FORMATION OF LAWNS.

Mr. Cole: — The unaccountable disparity of opinions respecting the most suitable grasses for laying down fine lands, and the extraordinary difference in the quality of the grasses as well as in the quantity of seeds used by the various individuals for this purpose, has led me to give this matter particular attention.

We are accustomed to hear a great deal said in praise of the "velvet turf" of English gardens, and from the difficulty of securing a similar velvet turf in gardens here, many people look despairingly upon their coarse Brachypodeum and cat's tail meadows, and their rough cocks-foot lawns, and fancy it one of the impossibilities of nature to make them better than they are.

Now, if we will just consider how much pains is taken by the people in England in making their lawns and selecting the proper seeds, and how little the same matters are attended to here, a considerable portion of the cause which creates the difference becomes apparent. My attention was first directed to the ignorance or neglect of lawn making by some specimens of the general methods performed at New Haven, in Connecticut. A few years ago, a new square (I forget its name) was sown with the varieties of agrostis, commonly called red top, and the Trifolium Pratense or common red clover. The result of this mixture was precisely what any one would expect. The red clover usurped the ground the first season, and smothered the young Agrostis. The second year, nothing was to be seen but the Trifolium, with here and there a coarse tuft of grass; a form, I may remark, which all grasses will quickly assume when very thin, or the plants standing separately, on ground moderately fertile, as was probably the case with the ground in question.

Another instance came under my observation in the same neighborhood, and one probably more common than the one described. In this instance also the object was to form a lawn to be kept mown with the scythe, and here the ground was sown with Lolium Perenne (common rye grass,) Dactylis Glomerata (orchard grass) the red top, and white clover, a notable mixture, truly, to form a lawn, and a mixture which no man who knows the nature of these grasses would ever think of sowing for such a purpose. For meadows or pasture land perhaps this is the best mixture that can be procured, and a good mixture it is even if a better were at hand. But for a smooth lawn no mixture could be worse. The coarse roots of the orchard grass and the clover secures possession of the ground. The rye grass appears only the first season, and the red top never appears at all, and after three years nothing remains but the rough tufts of the cocks foot, and the other coarse, indigenous grasses that chance to spring up amongst it.

While speaking of methods, I might as well mention another, which in the earlier days of ornamental gardening in America, was borrowed from the farmers, but which is still practised by some ignorant gardeners, and others, who do not know one grass from another, and consists in sowing the Phleum pratense, (Timothy or herds grass) along with the red top and clover, and sowing along with it a crop of rye, barley, or oats, under the pretext of shading it from the sun.

It requires very little skill or judgment to perceive that neither of these methods can succeed in forming a turf for lawn of shrubbery, or flower garden, and we sometimes find mixtures even more unsuitable than these, sown to form the velvet sward of a pleasure ground. So very little is this considered that a person who has got to sow a piece of lawn around a snug little villa, will go to a seed store, and buy a quantity of grass seeds, no matter what the sorts be, providing only they are *grass seeds*, without considering the nature and habits of the grasses—their periods of verdancy—or the nature of the soil on which they are to be sown.

There are various considerations to be kept in view in laying down a smooth lawn to be kept mown with the scythe.

1. Some grasses from their coarseness and luxuriance of growth, are inadmissible, as they not only rise up in coarse tufts after the lawn is mown, but also destroy the finer grasses, and rob them of nourishment—such as the Cocks foot or orchard grass (Dactylis Glomerata) and Timothy or herds grass (Phleum pratense.)

2. Some are objectionable on account of their inability to stand our dry summers, and the tendency with which they spring up after having been mown —such as the sweet vernal grass (Anthoxanthum Odoratum) and the common rye grass (Lolium perenne,) though both of these grasses in small quantities may be sown with the others.

3. Some are objectionable on account of their creeping roots, which soon exterminate the other grasses from the turf,—of these I might name the creeping couch grass (Holcus Mollis,) and the creeping dog's-tooth grass, (Cynodon Dactylon) which are common on land, and should be exterminated before the ground is sown down.

All the above mentioned grasses are common in our pastures and fields, and are to be distinguished from the following which are most suitable for lawns, and may be had of any respectable seedsman.

Cynosurus Cristatus—crested dog's-tail grass, is one of the best grasses for making lawns, its slow growth and its dislike of dry, sandy land render it unsuitable for our hot summers. It is also difficult to procure good seed. It should always form a concomitant of lawn grass.

Festuca duriuscula (hard fescue grass) and the Festuca Ovina (sheep's fescue) should always form a part of the mixture for a lawn, as they bear mowing well; they also withstand the drought, and maintain their verdure throughout the year.

The Agrostis Vulgaris (common bent grass, or

red top,) is the most common grass which is sold in the seed stores for making lawns. This seed is generally a mixture of various grasses—including different kinds of bent grass, Poa or meadow grass, and numerous others. I have picked up a dozen kinds of grasses from the product of one quart of what was sold for the common red top. I regard this circumstance, however, as beneficial rather than otherwise, providing it contains none of the coarser grasses. A fine sward cannot be produced with one or two kinds of grasses, but by a mixture of many kinds, providing they have the same habits of growth, as some grasses are late, some early some are green at one season, and some at another. Some will stand frost, as the Poa Nervata—a hardy variety of American meadow grass, but does not bear drought as well as many others. Others will bear the drought, as the Poa Nemoralis—Agrostis *Vars*—the Hard Fescue—Red Fescue—and Sheep Fescue—the Trifolium repens—and Filiforme or small yellow clover, which if sown on a gravel heap would soon cover it with verdure.

It is very absurd to fancy that a fine, permanent lawn can be made with any one or two kinds of grass, however good in themselves. If you will cut a turf one foot square from any peice of fine natural pasture, or grass land, you will find it composed of thirty or forty different kinds of plants, but none of the coarser grasses. They are nearly of one nature, habit, and one strength, and approximating to one general character, which is caused partly by the compactness of the sward, and partly by the continual cropping of the surface, both circumstances tending to exterminate the coarser herbage, and promote an equality of growth among the plants composing the sward. R. B. Leuchars.

Remarks.—We would call particulor attention to the preceding article. It comes from one who has had the advantages of experience and observation both in the old country and in this. The failure of lawns in our country is not owing to insurmountable obstacles in regard to climate and soil, or any other unfavorable circumstances naturally, but to the want of intelligence and adaptation of means to circumstances. As there is now a growing attention to ornamental culture, and rural embellishment, we trust that this subject will receive due consideration, and that we shall have some system of action that will insure success.

For the New England Farmer.

COLLECTING AND TRANSPLANTING WILD FLOWERS.

Mr. Editor:—In collecting materials for a flower garden, one of the most important requisites is to obtain such plants as combine a good degree of hardiness and ease of culture, with beauty of form and color.

A neglect, in this respect, has often proved the source of failure and disappointment, and caused the inexperienced florist to give up in despair, with the genuine Yankee conclusion that "it costs more than it comes to."

The best place to obtain hardy plants is in our own forests and meadows, as native plants require no acclimation, and a really beautiful flower is none the less so because it grows wild in our fields and woodlands. All that is necessary to insure success is a little care in transplanting, and to place them as near as practicable in a situation similar with respect to shade and moisture to that in which they were found in their wild state. The season for removing them, is, as far as my experience goes, of little consequence. I have succeeded as well with plants in full bloom as at any other time, and as this is the most favorable time to select the finest specimens, I prefer it to being confined to spring or fall.

The surest method is, first to ascertain the usual form and length of the roots, and then with a garden trowel, (an implement which every farmer should have,) remove the earth in such a manner as to leave the greater portion of the root with a quantity of soil attached. The place for its reception should be filled with water, and the root with the earth adhering, immersed and covered with soil, leaving a light depression to retain water on the surface. When the work is done in warm weather in summer, the plants should be shaded and frequently watered.

Those plants which blossom late in the season, should have their position indicated by a stake, as they frequently die down to the ground and do not re-appear till late in the spring.

Among the earliest wild flowers entitled to a place in the garden, is the Liverleaf or Hepatica Americana, the beautiful blossoms of which hardly wait for the snow to leave the ground before they exhibit themselves above the surface. The flowers are sweet scented, cup shaped, and the color varies from white to pink, blue and delicate purple. It is perfectly hardy, and in this section, is usually found growing on ledgy east side hills.

Following after this, comes the plant called Dutchman's Breeches, Dielytra, Formosa and D. eximea; the last of which is the finest; the leaf, as well as the flower, is quite ornamental, and the roots of the first named variety are bulbous, resembling small potatoes.

The *Trillium erectum*, False Wake-robin, is another spring flower whose white petals with pink centres present quite a delicate appearance; this plant usually grows in rather low or moist ground.

About the last of spring or first of summer, the singular looking blossoms of the Ladies' Slipper, Cypripedium, show their drooping heads peeping from beneath the hedgerow; and although the language of this flower is, "You are too wild for a domestic companion," yet, if placed in a shady situation, it is easily domesticated, and the oddity of its appearance gives it a claim to a place in the flower garden; there are two varieties, one yellow, the other pink.

But the most beautiful summer flower is the Cardinal Flower, *Lobelia Cardinalis*, which is found growing on the banks of streams and in moist places; it produces a long spike of brilliant red flowers which increase in size by cultivation, and the leaves are of a dark green, altogether, presenting as rich an appearance as any flower of its season.

Late in the fall, after the frost has destroyed almost everything in the floral kingdom, the Fringed Gentian, Gentiana Crinita, spreads its delicately feigned petals tinged the most beautiful blue and presenting an appearance excelled by few cultivated flowers.

In addition to these may be mentioned the Red

Columbine, Aquilegia Canadensis, and several varieties of the lily family, with their beautiful stellated leaves and drooping flowers which adorn our alluvial meadows.

There are also without doubt other plants equal to those already mentioned, growing in particular localities, and to those who have a taste for the beauties of nature it would afford a delightful relaxation from the toils and perplexities of every-day life, to take an occasional excursion for the purpose of discovering and collecting such as are worthy of cultivation.

I intended to add a few remarks on selecting hardy varieties from among the numerous flowers under general cultivation, but I have already carried this article to a sufficient length, and must defer it to another time. W. F. B.

Ashfield, Jan. 4th.

Remarks.—In our fields and forests are numerous wild flowers, easily procured and cultivated, that are far superior to the new and old flowers, the seeds of which are annually imported and sold in this country. It is astonishing that some persons will buy foreign seeds, and carefully cultivate the plants they produce, when they are in reality inferior to many worthless weeds that are trampled under our feet, or destroyed as cumberers of the ground, while our fine and splendid wild flowers are neglected. We hope that there will soon be an improvement in flouriculture as well as in other branches. If it is not worthy of more attention, it is worthy of more judicious attention than it has generally received in regard to native and exotic plants.

For the New England Farmer.

PROFITS OF POULTRY.

Mr. Cole:—As many of your readers are interested in poultrry, I send you my experience for the last ten months, hoping to add something to the common stock of knowledge, upon this subject. About the first of March, I bought forty hens. Some of these were soon killed for family use, and others were added to them as convenience required, during the spring and summer; so that the old flock did not vary much from forty at any time. They laid in March 425 eggs; April; 511; May, 330; June, 280; July, 246; Aug., 134; Sept., 159; Oct., 70; Nov., 75; Dec. 204.

On the 31st of Dec., the account stands thus:—

	Dr.
64 hens, $31,85; 10 doz. eggs, $3,76; 34 chicks $4,35. Total stock, . .	$39,96
29 bush. corn, 11 bush. meal, 10 do. oats, 10 do. potatoes, meat, $2,12. Total food.	39,81
Making the whole expense, . . .	$79,77
	Cr.
Eggs used and sold at market prices,	$34,92
91 chickens and fowls, " "	33,25
5 loads of manure, ...	5,00
28 blood fowls on hand, ...	35,00
32 common and crosses, . .	15,00
	123,17
Deduct expense, ...	79,77
It leaves a profit of, . . .	$43,40

The fowls were principally of the common kind, and a cross between the common and the Dixon Shanghaes, perhaps 1-4 of the latter. During the summer, they were confined in a large yard, furnished with gravel oyster shells and fresh water. Their roost, in the colder months, was in a barn cellar, and common loam from the fields was kept under them to receive their droppings. These were also occasionally sprinkled with plaster of Paris, to absorb the gases, and perhaps once a month removed. Their place was supplied by a new layer of loam and the process of sprinkling with plaster repeated. Charcoal dust, or earth from coal pit hearths, is a much better article to keep under them where it can be had. With proper care and more earth, I think twice the quantity of manure could have been made, of equal value with that commonly carried from the barn-yard. The cellar is sufficiently open for ventilation, and I have in consequence lost but few fowls.

During the present month, which shows a large increase in the laying, notwithstanding the cold I have fed them freely with small fish, which as they were to be had by the use of a scoop net, in a salt water creek close at hand, I have not set down in the account. These not only furnish them with animal food but the bones must afford lime for the shells of the eggs. Where fish can be had conveniently, either from the water, or the offal from a fish market, it will prove a good article of food.

The poultry has paid tolerably well, though with better management it would have paid much better. I havs learned something in egg and chicken culture, the past year, and expect to learn more the next. A hen, like every other creature of God, for which man has a use, pays its way, just as it is well cared for. If it don't pay it is a safe inference, either that you have no use for it, or that you do not manage it right. Find out the laws of its well being, and observe them in its management, and you will have a healthy and profitable animal. Farmers, and indeed all who have time and room to care for them, have a use for poultry. Keep them well and they will pay you. Try it and see.

Stonington, Ct., Dec. 31, 1850.

Remarks.—There is no stock kept in the country that will afford more profit on the food consumed than domestic fowls, if well managed; and with poor management, or neglect, there is no stock that produces so little. This should induce every one who keeps fowls to take the best care of them, for without such care, it is better to be without them.

CAPACITY OF SOILS FOR ABSORBING FERTILISING MATTER.

The property of earths for absorbing the pungent gasses and offensive matter in fœtid water, shows most conclusively their capacity for absorbing and retaining the fertilising ingredients mixed with them. Anything which is undergoing decomposition, or giving off putrid odors is immediately rendered innocuous by placing a thick covering of earth over it. The stench from a polecat, the smoke of brimstone, or a decaying carcass, is immediately absorbed and rendered imperceptible, when brought into close contact with the earth. It is, in fact, the grand deodoriser of nature; and in this capacity, it

is doubly beneficial to the human race, and to the herds and flocks subsisting upon its surface; first, by absorbing all these pestilential effluvia; and second, by turning them to the best account in her laboratory. In consequence of the addition of these, she gives increased luxuriance to vegetable, and fuller development and maturity to the seeds and crops that contribute to the support of innumerable races of animated creation. By the aid of these, she is enabled to lend a more unsullied white to the lily, and to add a deeper blush to the rose; and from them, too, she stores within the petals and calyx of every flower, the nectar that feeds the bee, the humming bird, and a countless throng besides. When, therefore, Abraham said to the sons of Heth, "give me a possession of a burying place, that I may bury my dead out of my sight;" and again, when the Israelites were required to carry a paddle when going without the camp, they acted only in accordance with the very best practices of modern agriculture.

But the earths possess this property in very different degrees. Silicious sands and gravels, have only the slightest hold upon foreign matter; while clays, and clayey loams seize upon them, almost with the avidity of charcoal, or animal black, and retain them with a still firmer hold, when they have once entered into a chemical union. If, however, alkaline substances, as lime, magnesia, soda, or ashes be added to the silicious earths, or if they become enriched by the addition of vegetable manures, their absorbing capacity is immediately and largely augmented. This is one of those beneficial results, always necessarily attached to good husbandry, which is fully exemplified, in the vantage ground, voluntarily conceded by his lord, in the gift of an additional pound, to the thrifty servant, whose "one pound has gained ten pounds." The soil that is in the best condition as to fertility and tilth, is in the very best possible state, also, to draw in and retain the floating elements of fertility, existing in the atmosphere.

To show some of the striking effects of the properties in soils, above alluded to, we subjoin some of the experiments and remarks of Professor Way on this subject. He passed through a filtering jar containing more than 9 inches depth of fine white sand, a quantity of cow's urine taken from a tank in the country. The liquid was so far altered by the filteration that the turbidity was removed, as it would be by filtration through paper, but the color and disgusting smell remained in all its intensity. Sand, therefore, obviously was not the active ingredient in soils in respect to the power under discussion. The other great ingredient of soils was clay, and to this Mr. Way attributed the power in question. As an experiment, comparative with the last, he would pass the same tank water through sand, mixed with one fourth of its weight of white clay, in powder, and they would observe the result was very striking. The liquid coming through was clear and free from smell; indeed, it was hardly to be distinguished by its external characteristics from ordinary water. There could be no doubt, then, that the property of soils to remove coloring matter, and organic matter yielding smell from solution, was due to the clay contained in them. Filtration was only a method of exposing the liquid in the most perfect form to the action of the clay, but it was not necessary to the success of the process. In proof of this, Mr. Way stirred up a quantity of soil with putrid human urine, the smell of which was entirely destroyed by the mixture, and upon the subsidence of the earth the liquid was left clear and colorless. It appeared, therefore, that the clay of soils had the property of separating certain animal and vegetable ingredients from solution, but was this property the only one exhibited? Mr. Way had found that soils had the power of stopping, also, the alkalies, ammonia, potash, soda, magnesia, &c. If a quantity of ammonia, highly pungent to the smell, was thrown upon a filter of soil, or clay made permeable by sand, the water first coming away was absolutely free from ammonia. Such was the case also with the caustic or carbonated alkalies, potash, or soda. A power, he remarked, is here found to reside in soils, by virtue of which not only is rain unable to wash out of them those soluble ingredients forming a necessary condition of vegetation, but even those compounds, when introduced artificially by manure, are laid hold of and fixed in the soils, to the absolute preclusion of any loss either by rain or evaporation.

But he had found that this property of clay did not apply only to the alkalies and their carbonates, but to all the salts of these bases with whatever acid they were combined. Here again was a beautiful provision; sulphate of ammonia, when filtered through a soil, left its ammonia behind, but the sulphuric acid was found in the filtered liquid—not, however, in the free state, but combined with lime, thus sulphate of lime was produced, and brought away in the water. In the same way muriate of ammonia left its ammonia with the soil, its acid coming through in combination with lime, as muriate of that base. The same was true of all the salts of the different alkalies, so far as he had yet tried them. Thus lime, in the economy of nature, was destined to one other great office besides those which had already been found for it—it was the means by which the salts ministering to vegetation became localised and distributed though the soil, and retained there until they are required for vegetation. It was necessary that when the alkali of a salt is laid hold of by a soil, some provision should exist for the neutralisation of the acid with which it was combined; for all other sorts, lime performed this usual office, but it had nothing to fall back upon for its own salts. Sulphate, muriate, or nitrate of lime, when passed through a soil, would come through unchanged. This, however, did not extend to lime, itself, nor to its carbonate, when dissolved in carbonic acid, as it is found in most waters. Quicklime, when dissolved in water, is removed by passing the water through most soils containing clay; and carbonate of lime, in solution, is so effectually removed that hard water may be softened by the same process.

It was not to be supposed that we could go on filtering indefinitely with the separation of the salts contained in the liquid. On the contrary, the limit was soon reached; and although small in percentage quantity, the power was in reference to the soil enormously great. He had found that a pure clay would absorb, perhaps, two-tenths per cent. of its weight of ammonia—that is to say, 1,000 grains would separate 2 grains of ammonia; and from reasons which need not then be noticed, a loam, or a well-cultivated clay soil would absorb nearly twice as much. Now every inch in depth of soil over an acre of ground weighed about 100 tons, and would be adequate to combine with and retain 2 tons of ammonia, a quantity which would be fur-

nished by about 12 tons of guano. Now one sixtieth of this power would suffice for the preservation of the ammonia of an outside dose of guano, consequently he was justified in saying that the property was practically of immense activity.

Obviously, if there was a provision in the soil for the retention of the salts of manure, and for the ammonia and other products of the decomposition of animal and vegetable matter, the soil was the proper place for those decompositions to go on, and no matter how remote the period when the crop would be taken, it would be perfectly safe to get the manure into the land as soon as practicable after its production. Again, the equable distribution was a point, also, which seemed of considerable importance; for, if it was an absolute necessity that a new class of compounds was found in the soil so soon as the manure reached it, it seemed to follow that those compounds furnished the elements of nutrition to plants; consequently we should seek to produce them by every means in our power. Liquid manuring, wherever practicable, was an effectual way of securing this distribution. In the case of artificial manures, that is to say, manures composed of chemical salts, much simplicity was introduced by the new discovery. Henceforth we must regard the different salts, (those of ammonia, for instance,) as of value in relation to the price of ammonia, or other bases contained in them, since they are all alike when incorporated with the soil.

In liquid manuring it had been usual to think that the application must be made to grass, or to land bearing some crop; but now that it was known that the land, not the plant, retains the manure, no theoretical difficulty could arise in the use of liquid manure for arable land.—*American Agriculturist.*

WATER FOR IRRIGATION.

We have frequently heard it said that hard water was preferable to soft for the purpose of irrigation. But from a discussion of the subject at a late meeting of the Council of the Royal Agricultural Society, it appears that the question is not fully settled.

Mr. Pusey said he doubted whether, in the present state of our knowledge, it could be admitted as a general axiom that hard water was good for irrigation, and soft water on the contrary prejudicial. In Devonshire, the criterion by which practical workers in water meadows were guided in their judgment of the quality of the water most suitable for their operations, was that of a certain warm, soft, and oily sensation it communicated to the touch, when a portion of it was held and examined in the palm of the hand; the absence of such a quality indicating, in their opinion, a water unsuitable for irrigation. He knew, as a fact, that when lime existed in any water in such excess as to give it petrifying properties, such was considered by practical men as decidedly unfit for irrigating purposes. He accordingly much doubted whether hard water was the only water fit for irrigation. He thought water meadows would not be confined to limestone districts; for in those geological districts in the west of England, where irrigation had long been successfully practised, lime was absent; the water being consequently soft. He considered that water in general became softened by remaining sometime in ponds. In the hilly districts of Devonshire, the water of the small streams running down the declivities was found to improve its irrigating qualities.

Mr. Almack considered snow as the best exemplification of the beneficial action of water containing ammonia, and possessing chemical qualities from other impregnation. Mr. Fisher Hobbs said he could fully confirm the views of Mr. Pusey.

Prof. Way said, in regard to the questions affecting the action of water in irrigation, he had only to repeat his diffidence on the subject, although he thought the criterion by which the Devonshire workers of water meadows were guided, might be fallacious. He had himself formed the opinion that the effects resulting from irrigation were due more to the chemical qualities of the water, than to the circumstances of its high or low temperature; but he was sensible how ignorant we were on these difficult questions, and he should be most open to conviction, and glad to learn all he could on these interesting subjects.—*Albany Cultivator.*

Remarks.—We thought that the subject had been settled for some years, that soft water was best for irrigation. Rain water has been found by experiment to be much superior to hard well water for irrigation. It contains a large amount of ammonia, which constitutes important elements in plants.

A WORD TO BOYS.

The learned blacksmith says,—"Boys, did you ever think that this great world, with all its wealth and woe, with all its mines and mountains, oceans, seas, rivers, with all its shipping, steamboats, railroads and magnetic telegraphs, with all its million of darkly grouping men, and all the science and progress of ages, will soon be given over to the boys of the present age—boys like you, assembled in your school-rooms or playing without them, on both sides of the Atlantic. Believe it, and look abroad on your inheritance, and get ready to enter upon your possession. The kings, presidents, governors, statesmen, philosophers, ministers, teachers, men of the future, are boys, whose feet, like yours, cannot reach the floor, when seated on the benches upon which they are learning to master the monosyllables of their respective languages."

THE COW TREE.

On the parched side of a rock on the mountain of Venezuela, grows a tree with a dry and leathery foliage, its large woody roots scarcely penetrating into the ground. For several months in the year, its leaves are not moistened by a shower, its branches look as if they were dead and withered; but when the trunk is bored, a bland and nourishing milk flows from it. It is at sunrise that the vegetable fountain flows most freely. At that time the blacks and natives are seen coming from parts provided with large bowls to receive the milk, which grows yellow and thickens at its surface. Some empty their vessels on the spot, while others carry them to their children. One imagines he sees the family of a shepherd who is distributing the milk of his flock It is named the *palo de vaca*, or cow tree.

☞ Owing to the length of the valuable article from the Albany Cultivator, we have postponed several communications, and notices of fruits.

For the New England Farmer.

THE BOLTON GREY FOWLS.

Mr. Cole:—The excitement which prevailed in this vicinity respecting the Cochin China, Shanghae and other large Asiatic fowls, and threw into the back-ground other breeds of fowls, less imposing in appearance but far more profitable, is passing away. Inquiries are made now, not for largest, but for the most useful breeds. Many persons *who* purchased at high prices the Shanghae and other large fowls, not being able to dispose of those raised by them at similar prices, have put them on their tables and have not found them to be any better than those of "the old sorts." The eggs produced by the Cochin China and Shanghaes, are proportionately smaller than those produced by other breeds, nor do the numbers make up for the deficiency in size.

Persons who have the means and proper places will do well to keep a few hens to furnish good and fresh eggs. This can be done with but little expense, as much house offal which will be consumed by hens would otherwise be lost. House-keepers well know that eggs from market are not always quite as good as the consumers desire.

To persons intending to keep a small number of hens, I recommend the Bolton Grey fowls as the breed best suited for their purpose, as they have no desire for incubation, being what is termed "everlasting layers."

The Bolton Gray is a small, handsome fowl, very hardy, active and industrious, requiring but little food, compared with other breeds. A dozen of Bolton Grey fowls can be kept, and well kept too, upon the same quantity of food on which four Shanghaes would barely exist. A Bolton Grey hen will annually produce in numbers and weight of eggs nearly double the amount produced by a Shanghae hen.

The Bolton Grey fowls weigh about six pound the pair, rarely exceeding six and a half pounds, when full grown and well fatted. The flesh is well flavored, tender and nutricious. The comb is generally double or rose comb, though single combs sometimes are thrown by the thorough bred fowls. The legs and feet are of a light blue or leaden color. The neck hackles are silvery white. The hackles and feathers of the body are of the same color, spotted or barred with dark brown, or rusty black; the spots or bars become more distinct as the fowl grows older. The tail in both sexes is darker than the body, and by its form, adds much to the beauty of the fowl.

The fancy breeders of England have, by crossing, introduced new "sub-varieties" of the Bolton Grey fowls, under different names, viz.: Golden and Silver Hamburgs, Bolton Bays, Chittepeats, Corals, Mooneys, Mosses or Spangled Hamburgs. A Mr. Smith has, by crossing the Bolton Grey with the game fowl, produced the "Prince Albert" fowls. The Prince Albert fowls resemble very closely the Mosses or Spangled Hamburg variety.

It is a well established fact that sub-varieties of fowls do not, when bred in line, produce their like, but revert to the breeds from which they were bred, and, after a few generations, become extinct or "run out," as for example, the colored or speckled Dorkings, which all writers and breeders admit cannot be bred in line. I cannot recommend these sub-varieties to the attention of breeders and amateurs, but advise them to procure thorough bred Bolton Grey fowls, and if they desire "Prince Albert," Golden, Silver or Spangled Hamburgs, Mooneys, Chittepeats or Mosses, to breed them at their leisure.

As a matter of information to your readers, I mention, that master George Dorr, of Dorchester, Mass., has Bolton Grey fowls, and, judging from the specimens exhibited by him at the different poultry shows, his fowls cannot be surpassed by those bred in this or any other country.

Yours, &c., S. Bradford Morse, Jr.

Remarks.—In regard to the large fowls, which, with their eggs, have been sold at high prices, people have not only made a great mistake, in our opinion, in running on large coarse birds, but they have been sadly disappointed is raising chickens; for, generally, they have not raised one-fifth so many chickens as they have bought eggs. Another serious evil, they have often, we are sorry to say it, bought eggs that have not produced chickens true to the mark. As an instance, a man who had only one pair of Shanghae fowls, sold one hundred dollars worth of eggs the past season, and it was supposed that the old hen had some assistance in laying them. Verily, there has been a great deal of humbuggery in the fowl business, and in our poultry shows; and men, whose reputation, some would suppose, would be a guarantee for fairness, have had a hand in it.—Ed.

MARKET GARDENING AND HIGH FARMING.

Editors of the Cultivator:—I have been taking a look at the market gardening and other modes of cultivating the soil in the vicinity of the city of Boston. The amount and profit per acre obtained by the systems of culture there practiced, is truly surprising.

I first visited the grounds of George Pierce, Esq., in West Cambridge. He cultivates twenty-six acres of land, all told. At the time of his purchase, his land was a light sandy loam, in a worn out condition, and would have been called the poorest kind of "plain land." He has spared no pains to redeem it from sterility. Manure has been largely purchased at the city stables, costing $7 per cord, when delivered on the farm. His whole annual purchases of manure amount to from $800 to $1000. In applying it to the soil, the principal rule observed is to put on all that can possibly do good.

Mr. Pierce considers that a light warm sandy loam is the most favorable soil for market gardening; and that although at first it may be comparatively unproductive, yet, when made fat by high cultivation, the crops are sure, and the land is more easily worked than heavier loam.

Seven acres are principally devoted to the raising of fruit. In the apple orchard, the trees stand 39 feet apart, each way. As they are mostly large trees, the ground is pretty much given up to them. A moderate coat of manure is spread over the surface each spring and plowed in, without particular reference to the roots of the trees, but with special care to prevent the barking of their trunks. All weeds are kept down, that the trees may have full possession of the soil. The apples are in consequence large and fair, the product is large, and the fruit brings top prices in the market. While the trees were young and growing, heavier dressings of manure were applied to the ground, and the open spaces between the rows were occupied with vegetables for the market. By means of this constant working of the land, the trees begin to bear some fruit in six years from the time they are set out; and in thirteen to fifteen years, they will produce, in favorable seasons, an average yield of five barrels per tree. From four trees of the Porter apple, Mr. Pierce last year sold twenty-four barrels of apples, so large, smooth, and fair as to command five dollars per barrel. Mr. Pierce is particular in so training the branches of his young trees as to prevent them from shading or otherwise interfering with each other; and the branches are encouraged to start out low on the trunk, to protect its sap from too high heat by the rays of the sun.

Four years ago, an apple orchard was planted out, embracing four acres, the trees standing in rows thirty-six feet apart, each way. At the same time, about 1000 peach trees were planted between the rows of apple trees, twelve feet apart each way. The land, for several years previous, had been devoted to market vegetables, under high cultivation. The growth of trees is very remarkable; and the peach trees are now bearing finely. Being short lived, they will soon be out of the way of the apple trees; and then, for a few years, vegetables will be grown in the open spaces.

Nineteen acres are devoted to the raising of vegetables for the Boston market. As before intimated, this land is highly manured; it is also deeply worked, as deep as the plows can be made to run. A great variety of vegetables is here raised, in order seasonably to supply the successive requirements of the market. For several weeks, in the height of the producing season, two and three wagon loads are daily sent to market, embracing 12 to 15 varieties of vegetables.

It is a leading and principal idea with Mr. Pierce, so to adapt different vegetables to the land and to each other, as to obtain at least two, and often four crops in a season, from one and the same piece of ground. For instance: on one plat of land, early radishes are sown broadcast, and early peas are sown in double drills, say five feet apart; at the proper time, either squashes, melons, or cucumbers are planted between the rows of peas: the radishes get out of the way of the peas, and the peas get out of the way of the vines; and thus three crops are successively matured. Enough manure is put on the ground in the spring to afford full sustenance to all the crops. On other ground, early potatoes are raised, and marketed in season to sow turnips and obtain a full crop. Or perhaps after the potatoes the land will be sown in August to onions. In the fall they are covered with swamp hay or other litter; they remain in the ground through the winter without injury; in May following they are ready for market, and in June the land is ready for any other crop. Or perhaps after the potatoes, spinage is sown for greens, and the next spring the land is clear.

It is also a leading idea to get all kinds of vegetables into the market at the earliest possible period; for any article appearing there a week or two before its usual time, commands a very high price, which richly rewards any extra labor or pains. Mr. Pierce has extensive hot beds for forwarding his various productions for an early market. He has 250 sashes, or some 1400 surface feet of glass, under which all sorts of vegetables are started.—Last spring he went largely into the production under glass of early dandelions for greens. The receipts from this source, in March and early April, amounted to $3 per sash, or one shilling per surface foot of ground. Tomatoes are sown under glass; and as it is important in early spring to economise the room in the hot beds, they are first

transplanted from the seed bed to a vacant space in the hot bed, 9 inches apart, and when too large to stand so closely, they are again transplanted twelve inches apart, and when the weather is right, they are taken up and placed in the open plat, where they are to mature. At one picking of tomatoes, this season, thirty-two bushels were obtained, which, from their earliness, sold at $1,75 per bushel. Pole beans are produced early by digging large deep holes for the hills and filling them partly with fresh hot horse manure; over that a suitable covering of earth is placed, and the beans are planted. For all *early* vegetables the ground is stoutly dressed with hot horse manure, which is plowed in, and which, by its fermentation, keeps the land warm and mellow, and brings the plants along very fast. Early potatoes are first started either on manure heaps undergoing fermentation, or in hot beds; and when the weather will admit, and the sprouts are six to eight inches long, they are carefully taken up by hand and transplanted in the drills in the open plats. This process forwards the crop from 15 to 20 days. On one quarter of an acre, managed in this way, this season, 81 bushels of marketable potatoes were dug, which, for their earliness, sold at $1,75 per bushel, or at the rate of $567 per acre.

In visiting Mr. Pierce's grounds, I was most interested in a field on the borders of Spy Pond.—Originally a high bank, shut down nearly to the water. This bank was dug away and tipped into the pond, until a long strip, or three acres of land was made, which was raised eighteen inches above the surface of the water. The earth taken to make this land was a sandy and fine gravelly subsoil, with the exception of two or three inches of the top, which was surface mould, placed there to form an immediately tillable soil. The waters of the pond will come into and stand in a hole dug anywhere on this land, more than eighteen inches deep; and the moist exhalations from below keep the surface so moderately moistened, that the growing crops do not suffer in the driest season, the land being of a sandy and fine gravelly nature, it admits of much moisture without becoming cold, heavy or baked; and as it has been abundantly enriched by manure, it produces the finest vegetables when, perhaps, other fields are suffering severely with drought. The crops are grown upon ridges or beds, formed by back furrowing with the plow, and varying from two to six feet in width. This is done to prevent any bad effects that might otherwise arise from heavy rains, falling upon a flat surface, already moist enough. In general 3 crops are taken from this land, each year. For instance, on the wide beds, a row of early beets grows on each border; a row of hills of summer squash in the centre, and celery in the dead furrows. The beets are first off, and then the squashes, and the soil composing the beds is used in earthing up and bleaching the celery. Mr. Pierce's average *weekly* sales of *vegetables* for nine months, in 1849, were as follows:—

In March,	$40 00
April,	50 00
May,	80 00
June,	90 00
July,	140 00
August,	139 00
September,	140 00
October,	180 00
November,	39 00

The total cash receipts for the sale of fruits and vegetables, for 1849, were as follows:—

Of Peaches,	$591 60
Porter Apples,	148 60
Bartlett Pears,	18 12
Bell do.	4 75
Greening Apples,	12 50
Baldwin do. (windfalls,)	36 00
39 bbls. do. picked,	185 50
	$997 97
Total vegetables of all kinds	2,629 72
	$3,626 79

These are certainly large receipts to derive from the products of 26 acres of land. It is true that Mr. Pierce has the advantage of a ready market and good prices; but after making every allowance that exists, or can be thought of, I think we must all conclude that high cultivation is the true system; that

> "'*Tis folly in the extreme* to till
> Extensive fields, and till them ill;
> For more one fertile acre yields
> Than the huge breadth of barren fields."

I next visited Leonard Stone, Esq., at his farm in Watertown. Mr. Stone's home farm consists of 15 acres of woodland and pasture, 25 acres of reclaimed meadow, and 80 acres devoted to fruit, market gardening, and a rotation of field crops.—The largest portion of his tillage land is a stiff, moist loam, resting on a substratum of clay; and although the surface is quite rolling, it requires a great deal of draining to fit the soil for profitable tillage. The balance of the tillage-land is a light, dry, warm loam, with some gravelly knolls, and the whole rests upon an open gravelly subsoil.

The owner has for several years been clearing his tillage-fields of stones, which were formerly so numerous as to be much in the way of the plow. They have been sunk in the construction of drains, and thus the surface of about every acre of the stiff land has been relieved of both stones and surplus moisture. The ditches for drains are dug about three feet deep, and of convenient width to work in; in them, drains are first laid, six inches wide and ten inches high, of small cobble stones, and covered with larger sizes of the same; the ditches are then filled with small stones, to within a foot of the surface of the ground; a layer of shavings or tough sods is then put on, and the work leveled up with loose earth. The drains thus constructed have stood from 8 to 12 years, and still work well.

There are two reclaimed swamps on this farm of about 12 acres each; they are underlaid at suitable distances with stone drains, wherever there is sufficient fall to the land to produce a good draught through them; and where the land is nearly level, open ditches are made. The open drains used frequently to become inoperative by the washing and caving in of their banks—occasioned by high freshets in the spring. After various experiments, the following plan for their protection was adopted: as early in the summer as the water had fallen away, so as to admit of working, a commencement was made at the lower end or outlet of the ditch, by throwing a temporary dam across it, a few rods above or up the ditch; the portion thus freed of water was then cleared out; the sides were made of a uniform and proper slant; narrow trenches were dug, four inches lower than the natural level of the bottom of the ditch; sods were cut from the

swamp six inches wide, eighteen inches long, and four inches thick; then, commencing in the narrow trench, four inches lower than the bottom of the ditch in order to prevent the undermining of the work; and following up the slanted sides with one course thick of sods, and breaking joints in the upward course the same as is done in laying brick, and laying the sods grass side down, the wall or sodding was carried up nearly to the surface of the swamp; a sufficient portion of the surface was pared down to a level with the wall to admit of a sod on top, laid grass side up, and level with the surrounding swamp, and resting on the sod wall and on the natural ground; the face of the banks was then trimmed smooth with a spade, the temporary dam moved further up the ditch, and so on, till the whole line was completed. The grass immediately started from the edges of the sods, and before winter, the whole surface of the banks was well covered with grass. These banks have stood perfectly for 9 years.

In draining the bog meadows, a ditch has been dug three feet deep and four feet wide, the whole length of the border between the uplands and the meadows. In this a stone drain was first made, then the ditch filled with stones, and a stone wall built on top for a fence, by which three purposes have been accomplished; the stones from the uplands have found a resting place, out of the way of the operations of tillage; the springs flowing into the swamps from the uplands have been cut off; and the earth taken from the ditch is just the thing for a covering for the meadows. When the drainage is completed, those parts of the meadow that have dried off enough to bear up a team are plowed, and those that are still too wet and miry are turned over with a bog-hoe. When the surface of the meadow is frozen, clay, loam or gravel, whichever is handiest, is carted on and spread one and a half inch thick, or at the rate of about an ox-cart load to each square rod of ground. On the top of that a good coat of compost made of loam and manure is spread, and then a half bushel each per acre of herds-grass and red-top seeds sown. After this, most of the land can be plowed; and as often as the cultivated grasses need renewing, the sod is turned in September with the plow, manure applied on top, and grass-seed sown.—Forty tons of hay have been cut in a season, on 12 acres of reclaimed meadow.

Mr. Stone plows and manures about twenty-five acres of his upland, yearly. A part of this, however, is not cropped at all, but is kept open for the benefit of the trees growing thereon. The balance is devoted to the growing of vegetables for market, the raising of carrots and other roots for the stock, and the cultivation of field crops. For the land that grows vegetables, he purchases horse manure from the city stables and mixes it with compost made by the hogs, in order to start the crops early. For all other crops, the manure used is wholly made on the farm, and is applied at the rate of thirty loads, of twenty-five bushels each, per acre. Mr. Stone is in favor of deep tillage. He plows his land as deep as the soil will admit, gradually increasing the depth, until, on some of the fields, his largest sod plow will go no deeper. He thinks that any land may be advantageously deepened by turning small portions at a time of the subsoil to the surface, to be converted by sun, air, frost, and manure, to productive loam. Under this system of deep ploughing and high manuring, his crops are all luxuriant, and when those portions of the land devoted to a rotation of crops are laid to grass, he thinks they give him an average of two tons of hay to the acre, at a first cutting. Two hundred loads of first crop hay have been put into the barns this season, 50 of which, with the rowen crop, the corn, fodder, roots, &c., will keep his own stock, and leave the balance for market.

A good deal has been done with excellent effect in the admixture of the different soils upon the farm. Four horses and four oxen are kept for farm work, and at leisure times they are employed in exchanging soils. The muck from the low meadows is drawn to the yards for compost, and from thence to the upland fields. As before remarked, the lowland meadows receive a coating of clay, loam, or fine gravelly subsoil, the latter of which is found to be the best, for it supples, in greatest quantity, those matters that give strength of stem to the cultivated grasses, and which are deficient in the peaty soils. In various places on the upland stiff soil, the underlying clay comes through to the surface, and the land retains too much moisture, in some seasons. On all such places, from one to three inches of sandy or gravelly loam are spread, with an effect upon the crops that is apparent to the observer in a moment. So, too, on the dry, gravelly knolls, an application of two or three inches of clay from the stiff lands changes the whole aspect of the vegetation growing there.

The most important production of the farm is fruit; the average annual yield of Baldwin and Russet apples being about 1,000 barrels. Other varieties are raised, but these two are the principal. The old orchards are manured and plowed each year, but no crop is taken except that afforded by the trees. In younger orchards, the open space between the rows of trees are devoted to vegetables for market. The apples are carefully, picked from the trees by hand, packed in barrels and stored in a dry, airy fruit cellar under one of the barns. The farm produces a variety and abundance of other fruits, such as pears, peaches, plums, cherries, quinces, and summer and fall apples.

About ten acres are devoted to market vegetables, in all the varieties. The details of their cultivation would be a repetition of those already given in the account of Mr. Pierce's cultivation. While at Mr. Stone's I saw a market wagon loaded, and had the curiosity to take an account of the various articles sent off. They were as follows: tomatoes, onions, beets, summer squashes, cucumbers and mangos, and string beans for pickling, potatoes, green corn, pole beans, apples, peaches, and pears.

Mr. Stone has a farm of 66 acres a mile or two from home, which he rents for $600 per annum. He remarked to me that his tenant paid his whole rent last year from the sale of the cucumbers raised on five acres—leaving the proceeds of the remaining 55 acres at his own disposal.

Mr S. keeps about 20 head of cattle and horses, and from 40 to 50 hogs. Shoats weighing from 100 to 120 pounds each, are purchased at Brighton market, spring and fall, fed six months, then slaughtered and taken immediately to market.—At killing time, they average from 275 to 300 lbs. each, dressed. All the refuse fruits and vegetables of the farm are fed to them. A kettle or

cauldon holding six-hundred gallons and set in an arch, is mostly filled with vegetable products, to which is added six bushels of meal, and the whole is then boiled. The contents when cooked are taken out, and to the mass is added an equal measure of *slimes*, purchased at a starch factory. These *slimes* are the best part of the washings in the process of making starch from flour. For the last six weeks the meal is increased in order to get the hogs in a high state of fatness. The yard in which the hogs run is well supplied with muck, turf, weeds, and all sorts of refuse litter, and these materials are mingled and enriched by the swine. When not at work, the horses are stabled all, and the oxen most of the year. The other cattle of the farm are stabled most of the time in the winter, and the cows nights through the summer. Their stables are directly over the barn cellar, into which the manure goes; suitable quantities of muck, loam, turf, &c., are frequently added to the manure, the hogs have free access, and the materials are well mixed. In these ways some 600 loads of compost, of 25 bushels each, are annually made.

Mr. Stone showed me a statement made by him, at the request of the Commissioners of Patents, of the whole amount of receipts and expenditures for three years. Here it is:—

Whole amount for hay sold,		$4,257 00
do. do. pork,		4,552 00
Fruits, vegetables, stock, &c.		10,025 00
		$18,834 00
Amount paid for labor,	$3,521 00	
grain and feed for hogs,	2,058 00	
shoats,	1,575 00	
manure,	373 00	
provisions	260 00	
goods,	707 00	
taxes $310, stock $202,	619 00	
miscellaneous items,	1,025 00	
		10,138 00
		$8,696 00

I think these results quite naturally remind us that too many of our farmers, by scattering very limited labor and means over unlimited acres, mostly dissipate the former, and at the same time wear out the latter; and fertility having been once sapped, the further application of the old system, becomes emphatically, a lengthening wearisome chase after lean and scattering crops. In the older and settled districts of our country, we need to commence a severe condensation in our farming, to learn a juster adaptation of capital, labor and land to each other. Our farmers can only realize substantial profits, and maintain indepedence and true dignity, by good cultivation.

Scanty crops offering no cheer to labor, it becomes laggard and faint; large crops stimulating labor, it easily surmounts obstacles, burdens lighten, it becomes pleasure. F. Holbrook.

Brattleboro', Vt., Sept. 5, 1850.

Albany Cultivator.

Something New.—A new article of boots and shoes has just come up in England. It is called the Pannas-Corium, or leather cloth, and was invented by a person named Hall. The material is cotton, but has the mass and general appearance of leather, and receives a polish from ordinary blacking and in the same way. It is used only for the upper, the sole being leather. It is said to be as durable as leather, never cracks or splits, and possesses the advantage of not drawing the foot.

TO RAISE WATER BY THE SYPHON.

Messrs. Editors:—Seeing in my "Farmer" for November, your letter of inquiry from Joseph Briggs, of Willet, N. Y., respecting syphons, together with the answer of the editor, I take the liberty of offering Mr. B. the result of my experience in the syphon line.

I have one in successful operation under the following circumstances. Water is conveyed to the house, a distance of sixty-six rods, over a ridge of land sixteen feet high, in half inch lead pipe, No. 1. It is discharged four feet lower than the surface of the water in the spring, and at the rate of eighteen gallons per hour. The pipe is thin, and had to be soldered in seven or eight places. I had a vast deal of trouble and tribulation with it before I got it tight, but it now works so beautifully, that I am satisfied. The whole question turns on this point. Syphons will continue to work, provided they are perfectly tight, and that there is a moderate amount of fall from the surface of the water in the well to the place of delivery. Water is raised in a syphon on the same principle that it is in the suction pump, and may be elevated to the same height, to wit, thirty-two feet. The *objection* to raising it very high in a syphon is that air separates from water when thus raised, and the higher it is drawn the more. It is essential that there should be sufficient current to carry out this air as fast as it is evolved, otherwise it would accumulate and stop the water. Four feet of fall answers the purpose in my case, but I do not believe that much less than that would do. The amount of fall required depends, of course, on the length of the syphon.

Small beads of air issue from my pipe along with the water every minute or two, to ascertain the quantity of which, I collected them by means of a bottle of water and funnel inverted over the mouth of the pipe in the tub, and found the quantity to be one-half pint in twenty-four hours, or the bulk of one ounce of water to every fifty-four gallons.

I at first constructed, at a cost of some money and a great deal of labor, an apparatus similar to that described in Ewbank's Hydraulics, for taking out the air at the summit, but I found it entirely unnecessary, nay worse than useless, and I have taken it out and have now only a plain pipe.

At one time despairing of getting the syphon to work, I procured a *ram* and applied it, but the supply of water not being sufficient to keep it going, I made another examination of the places where the pipe was joined together, and fortunately discovered the cause of all the trouble I had had, which was an imperfection in the soldering; as soon as that was reconciled, I had no further use for the ram.

With your permission I will make the following suggestions. If you do not wish to convey the water more than thirty rods, and if you have six feet or more of fall, I would recommend to use heavy three-eighths pipe, and if possible have it all in one piece. I think you can procure it so by ordering it from the manufacturer. It will deliver an abundant supply of water for any farm, will cost less and be less liable to get out of order than pipe of larger calibre. You are probably aware that the longer a tube is, the less water will pass through it in a given time and with the same amount of fall. In my case, half inch pipe is not too large. To avoid raising the water, I would dig the ditch four feet deep, or more, at the summit, if the nature of

the ground will permit. Then to start it, it would doubtless be a good way to fill it before putting it down as suggested by the editor of the Farmer, of you can change it at any time with a common beer pump, which may be obtained at the hardware stores, without the counter fixings, for about twenty shillings. To adapt it to your purpose, you have only to attach about three feet of lead pipe to each end of it, and fasten the wooden frame to a piece of plank large enough to stand on. It may be worked either as a suction or force pump, but I prefer the latter. To couple it to the syphon, make a quill of hard wood, say locust, five inches long, and introduce one end of it into the syphon and the other into the force pipe; then tie a piece of strong twine from one pipe to the other, leaving it slack in the middle, and then take a large nail and make it taut by twisting it after the manner of an old fashioned saw-strain. I charge my pipe in this way and the operation requires about twenty minutes of hard work. To do it by suction takes longer, and requires that the valves, couplings, &c., should be in perfect order.

As to *testing* the pipe, it must be borne in mind that when a syphon leaks, water does not escape from it, but air sucks in; it is therefore not easy to detect an imperfection. I would recommend to start it and see if it continues to work. If it does not you may be certain that it is not sound. A leak, if tolerably large, may be discovered by forcing water in *hard*, but air will enter through a crevice when water cannot readily be forced out. The pipe might be tested with an air-pump; if a perfect vacuum can be formed, you can rely upon it that it is all right. Do not on any account cover up the pipe till it is proven.—*Genesee Farmer.*

O. P. Laird.

Oneida Castle, N. Y., Nov., 1850.

APPLICATION OF CHLOROFORM TO ANIMALS.

Dr. Dadd, veterinary surgeon, of this city, makes the following statement in the Chronotype, showing the great utility in giving chloroform to animals when painful operations are to be performed on them.

Dec. 9th, 1850, I was called to see a gray mare, of the nervous temperament, about nine years of age, owned by Mr. Webb, of Haverhill Street, in this city. The animal had just received a severe injury in consequence of running away and coming in contact with the shaft of a vehicle. The animal appeared to labor under considerable excitement, pulse quick and wiry; respiration hurried; and incipient violent twitchings of the humoral and pectoral muscles. On an examination of the wound I found a laceration of the skin and fascia, commencing four inches below the point of the olecranon (or point of the elbow) on the outside of the off fore leg, continuing down to the centre of the carpus, (knee.) The upper portion of integument being also lacerated crosswise, the flap presented a triangular appearance. The muscle known as the *extensori melacarpi oblique* was divided. Two small tendons, which operate in the extension of the leg and foot, were also severed. The periosteum, covering the bone, was also lacerated in several places.

Taking into consideration the great pain the animal suffered in consequence of the large surface exposed, and the extra pain the animal must necessarily suffer in sewing up the wound, I thought it an act of humanity to administer chloroform. The animal was accordingly cast—in the usual manner—having previously strewed the ground with straw to break the fall and prevent concussion. A bundle of straw was then placed under the head of the animal, and that firmly held down by an assistant. The wound having been carefully washed, and all extraneous matter removed, a sponge, saturated with two ounces of chloroform, was then applied by Dr. Hogan to the nostrils. In a few seconds, the pupils became dilated, difficult respiration set in, which soon subsided, the pulse became soft, and the animal appeared perfectly insensible. Knowing it to be a matter of impossibility to unite the divided tendons, the principal one having been torn from its attachment at the carpus (knee,) I secured the ragged and pendulous portions, and proceeded to bring the skin in apposition, where it was confined by interrupted sutures. Twelve stitches were taken, in all, about one inch apart, leaving an orifice of half an inch at the lower part of the wound for the escape of fluids. A pledget of linen, moistened with tincture of myrrh, was then applied, and over the whole a bandage. The casting apparatus was then unlocked, and in a short time the animal got up and walked to its stall. The animal showed no signs of pain, except once, during the operation, and this was owing to the evaporation of the chloroform; on another ounce being applied, the animal quickly relapsed into its former state of insensibility.

Present state of the animal, 24 hours after the accident:—Nervous excitement entirely abated; pulse and respiration natural; appetite good;—the wound (as far as I am able to judge without removing the bandage) is doing well.

ADVANTAGES OF LARGE WHEELS TO HORSE CARTS.

The advantages of large wheels to horse carts are obvious, as they greatly increase the facility of draught, and tend to lessen the number of accidents to which all two-wheeled carriages are liable, from the shaft horse falling down.

By adopting large wheels and a bent axle, the cart becomes less liable to such accidents, as the centre of gravity, (the fore end of the cart body,) and the centre of suspension, (the axle,) are brought much nearer together, the former being placed nearly over the latter, at a small distance only from it. A horse falling with a loaded cart so constructed, will experience but little increase of weight upon him while down. The centre of gravity will be thrown forward, but in a very trifling degree. In carts, &c., it will almost always happen that the centre of gravity will be above the point of suspension (the axle;) but in gigs, &c., the body may be placed below that point when the body will always maintain the erect, (that is a horizontal) position, and should the horse fall down, will operate to lift him up again. A gig so constructed will be almost beyond the possibility of those serious, and frequently fatal accidents, which occur from the falling of the horse.

☞ Sheridan celebrates the felicity of army husbands—a man who "may wed you to-day, and be sent the Lord knows where before night; then in a twelvemonth, perhaps, come home like a Colossus, with one leg at New York, and the other at Chelsea Hospital."

Mechanics' Department, Arts, &c.

OXIDATION OR RUSTING OF IRON.

"There are many mysteries about iron," said a machinist to us, one day, "and one of them is the difference which different pieces or parcels of iron exhibit in regard to rusting or oxidizing. Some pieces will rust very easily and rapidly, while others will resist rust a long time." We agreed with him, that there were many mysteries in regard to the nature and action or changes in iron, but thought we had better change the expression "mystery," and refer it to our ignoranae. Indeed mystery is only another word for ignorance, for what we know and fully understand is no mystery. It would be a better expression, therefore, to say that we are yet ignorant of many of the properties of iron, and the causes of the changes which it undergoes.

The mystery of iron rusting, we all know, is caused by its combining with oxygen. This is a chemical, or, as some would call it, an *electro-chemical* action, but all the circumstances which vary this action are not yet understood, nor all the laws which are necessary to produce, increase, retard, or stop the action, fully known. Cast iron resists the action of sea water, it is said, much better than wrought iron, and yet when this kind of iron has been immersed a long time in sea water, on being exposed to the air it will become hot and fall to pieces.

In 1545 the ship Mary Rose was sunk during a naval engagement. Not long ago some of the cannon balls were raised from the vessel, where they had been buried in the water 300 years. They became red hot, on being exposed to the atmosphere, and fell to pieces. This phenomenon cannot be fully explained without knowing the exact ingredients of the mass of which they were composed. They might not have been made of perfectly pure iron, or some circumstances connected with their position might have brought about a change, during that long period, with which we are not acquainted in our limited operations.

Some chemical experiments go to prove that there are processes in nature, which, if we knew how to apply them, would render iron proof against rust, and, on the other hand, there are processes which would make it one of the most easily rusted of any metal known.

It is stated by Faraday that if iron be placed in nitric acid, which will dissolve it readily, and be touched or put in contact with a piece of platina, the strongest acid will have not the least action upon it. It has been stated by Stephenson, the celebrated engineer, that iron which is worked will not rust so readily as that in a state of rest, and he cites as authority that in railroad iron the rails which are worked do not rust, while rails which lay alongside, and are not worked, will rust in a short time. He tried to explain it by supposing that electricity was developed, during the passage of the cars, and that this prevented rust. How far this theory is correct is not certain. The study of nature and properties of this invaluable metal is one of great importance. It already enters into almost every manufacture. Without it civilization could not continue. As new facts, in regard to its nature and capacities for new uses, are developed, it becomes more extensively used, and we have no doubt by future researches it will be found capable of entering still further into compositions and structures for which it is now thought totally unfit. Those who are "cunning workmen" in metals have in this single one a study of great importance and usefulness.—*Maine Farmer.*

A New Watch.—A great improvement in the manufacture of watches has just been made in Geneva, by which keys are rendered unnecessary. By simply turning a screw in the handle, the watch is wound up, and another movement regulates the hands. The first watch manufactured with this improvement is intended for America, and its case is said to be a rich and curious specimen of art, and historically interesting, the ornamented border containing a view of the famous "Charter Oak," of Connecticut. It is a good action thus to make a watch case teem with historic associations without destroying its ornamental beauty."—*Farmer and Mechanic.*

MERITS OF FOWLS.

The breeding of fowls, with many, is more a matter of fancy than of the intrinsic value of the different kinds. The safest way of giving advice on this subject is to say,—let each individual select that variety which he likes best—breed and compare the merits and demerits of each until his judgment is well founded upon actual experience—holding rigidly to the principle of not crossing different breeds for permanent use, but keeping them, if possible, entirely distinct, for in no other way will the test be a fair one.

The Cochin China, Shanghae, Great Malay, and other monstrous breeds produced by crossing with one another, in my humble opinion, are not the most desirable kinds for general use, as their legs are very long and large, which are bad points in a fowl—their flesh coarse, and they are great eaters—besides, they lay comparatively, but few eggs, which are very liable to be trodden upon and broken at the time of sitting.

The dorking is a fowl, all things considered, much to be preferred to all others for profit. They are larger and longer bodied, and of better proportions, according to their size, than any other variety—their bodies being long, plump and well fleshed—short legs, full, broad breasts, little waste in offal.

That there is a difference in the number and quality of eggs laid by different hens, is conceded by all.

Of these, the Polands stand first in public estimation—but to say or believe, that they are everlasting layers, is a great mistake. If I wanted eggs only, and not chickens, I would keep this variety.

Mr. Doland, of your city, showed some very fine specimens of this breed at the State fair. The black Polands are *useful* as well as *ornamental.*

"An egg is an egg in the market"—and "a pint is a pound,"—and the buyer seldom stops to think of the weight, although there may be three times the difference in the bulk of those in the same basket. 'Tis not the largest eggs that are the most profitable to the buyer, as the flavor differs not only in the different breeds, but with the kind of food on which the hens are fed, and the season of the year in which they are laid.—*Granite Farmer.*

A Lover of Poultry.

☞ A white gunpowder, said to be more powerful than the black, has been manufactured in England.

Ladies' Department.

FALSE PRIDE A BANE OF SOCIETY.

A young lady of high accomplishments (and no PRIDE) in the absence of the servant stepped to the door on the ringing which announced a visit from one of her admirers. On entering, the beau, glancing at the harp and piano which stood in the apartment, exclaimed, "I THOUGHT I heard music! on which instrument were you performing, Miss!" "On the gridiron, sir, with an accompaniment of the frying pan!" replied she; "my mother is without HELP, and she says that I must learn to FINGER these instruments sooner or later, and I have this day commenced taking a course of lessons."

The present system of domestic education has less of common sense in it than any other arrangement in social life. The false idea that it is ungenteel to labor—especially for a lady—prevents thousands from taking that kind and amount of bodily exercise on which sound health and a firm constitution so much depend. Those who are brought up to work in the country, and go to the city and make a fortune, indulge the false pride of training their children to despise labor, which was the birthright of their parents, and make it a point to decry honest toil, in which they were themselves reared, and to which all their relatives are still devoted. This is mushroom aristocracy, and the most contemptible of all. Young men will willingly become clerks, and roll and lift boxes, and so long as they are CLERKS and in a mercantile house, and can wear a standing dicky, they despise an apprentice to a business perhaps far less humiliating and subservient—all because they are MERCHANTS, or intend to be.

The successful merchant is a laborious man, but so long as his efforts are not regarded as labor, it does not wound his pride. He toils for thirty years as vigorously as a mechanic, but not exactly understanding that his work is really labor, he feels that he has just as good a right to despise it as does the man who is born to fortune; and he teaches his wife and daughters to despise every useful occupation, and goes to his store daily to sweat and toil, not doubting the respectability of his efforts, however onerous, so long as the world does not brand it with the disgraceful name of LABOR. For such men—for ANY man to despise the ennobling subsistence, is making war on the natural institutions and best interests of society, and treading sacrilegiously and contemptuously on the ashes of his father or grandfather who tilled the soil. Young men! you are fostering a false pride which will ultimately rankle at the core of your happiness and make you slaves indeed. Off with your coats and in the name of reason and liberty rush with manly strength into architecture, or the manufacture of works of utility, and leave the measuring of tape to those whose souls are as "short as the yardstick and as narrow as the tape." Be men! cease to crowd into clerkships and starve your way through life in the vain hope of being the fortunate ONE who shall become rich out of the five thousand who remain poor. Ladies, if you would be worthy of your age, of the genius of a noble country, and of an exalted civilization, set an example of wisdom by employing your time on something useful to the world. Are you rich? thank God, then, that you may have your time at your command to bless and benefit your less fortunate sisters of want, and their helpless offspring. You can thus become angels of mercy, almoners of good, and merit the benedictions of God's poor while you live, and their tears when you die.—*Phrenological Journal.*

HINTS FOR YOUNG LADIES.

If any young woman waste in trivial amusements, the prime season for improvement, which is between the ages of sixteen and twenty, they regret bitterly the loss, when they come to feel themselves inferior in knowledge to almost every one they converse with; and above all if they should ever be mothers, when they feel their inability to direct and assist the pursuits of their children, they find ignorance severe mortification and a real evil. Let this animate their industry, and let a modest opinion of their capacities be an encouragement to them in their endeavors after knowledge. A moderate understanding, with diligent and well-directed application, will go much farther than a more lively genius, if attended with that impatience and inattention which too often accompany quick parts. It is not for want of capacity that so many women are such trifling, insipid companions, so ill qualified for the friendship and conversation of a sensible man or for the task of governing and instructing a family; it is often from the neglect of exercising the talents which they really have, and from omitting to cultivate a taste for intellectual improvement; by this neglect they lose the sincerest pleasures, which would remain when almost every other forsakes them, of which neither fortune nor age can deprive them, and which would be a comfort and resource in almost every possible situation in life.—*Mrs. Chapone.*

EXCELLENT COLD STEW.

Take a nice fresh white cabbage, wash and drain it, and cut off the stalk. Shave down the head evenly and nicely into very small shreds, with a cabbage cutter or a sharp knife. Put it into a deep dish, and prepare it for the following dressing. Take a gill or a half tumbler of the best vinegar, and mix with it a quarter of a pound of fresh butter, divided into four bits, and rolled in flour; a small salt-spoon of salt, and the same quantity of cayenne. Stir all this well together, and boil it in a small saucepan. Have ready the yolks of three eggs well beaten. As soon as the mixture has come to a hard boil, take it off the fire, and stir in the beaten eggs. Then pour it boiling hot over the shred cabbage, and mix it well all through with a spoon. Set it to cool on ice or snow, or in the open air. It must be quite cold before it goes to table.

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